

**Amendments to the Specification:**

Please amend the specification as follows:

Please replace the paragraph at page 1, top, with the following replacement paragraph for federal government research support:

**STATEMENT OF FEDERAL GOVERNMENT RESEARCH SUPPORT**

The subject matter of this application was developed in part with federal government funds from grant no. AFOSR F49620-00-1-0283/P01, DARPA DAAD 19-00-1-0414, and NSF EEC-0118025. The federal government may have certain rights in the invention.

Please replace the first full paragraph on page 5 of the specification with the following rewritten replacement paragraphs:

~~Figure~~ Figures 1(a)-(c) ~~provides~~ provide a schematic diagram depicting the patterning of magnetic BaFe nanostructures on silicon oxide. Figure 1(a) An ~~shows an~~ atomic force microscope (AFM) tip coated with a precursor solution of barium ferrite is brought into contact with the silicon oxide substrate. Figure 1(b) The ~~demonstrates how the~~ solution is transferred to the substrate as the tip is traversed across it. Figure 1(c) illustrates how post-annealing ~~Post-annealing~~ yields the desired BaFe nanostructures.

Please replace the second full paragraph on page 5 of the specification with the following rewritten replacement paragraphs:

~~Figure~~ Figures 2(a)-(f) ~~provides~~ provide characterization of the bulk BaFe particle samples. Figure 2(a) is XRD pattern of as-synthesized BaFe particles. The indexing is based on tabulated hexagonal BaFe<sub>12</sub>O<sub>19</sub> reflections. Figure 2(b) is XRD spectrum of BaFe particles synthesized without the preheating step. Figure 2(c) Transmission is transmission electron microscope (TEM) image of as-synthesized BaFe particles. Figure 2(d) High is high resolution TEM image showing single crystal nature of these particles. Figure 2(e) Energy-

~~dispersive~~ is energy-dispersive x-ray spectroscopy (EDXS) spectrum obtained from these nanoparticles. The signal for Cu comes from the copper grid on which these particles were supported. Figure 2(f) Magnetic ~~presents magnetic~~ hysteresis measurements of the particles at room temperature.

Please replace the third full paragraph on page 5 of the specification with the following rewritten replacement paragraphs:

~~Figure~~ Figures 3(a)-(f) ~~provides~~ provide scanning probe microscope (SPM) studies of the BaFe pattern and x-ray photoelectron spectroscopy (XPS) characterization. Figure 3(a) Topographie ~~is a topographic~~ AFM image of magnetic BaFe lines on the silicon oxide substrate. The speed for the BaFe precursor deposition is 0.2  $\mu\text{m/s}$ . Figure 3(b) Topographie ~~is a topographic~~ AFM image of an array of magnetic bars. The deposition speed is 0.1  $\mu\text{m/s}$ . Figure 3(c) Cross-sectional ~~is a cross-sectional~~ topography trace of a line (marked by the arrows in Figure 3(b)). Figure 3(d) Magnetic ~~is a magnetic~~ force microscope (MFM) image obtained from these magnetic bars. Figure 3(e) Barium ~~shows barium~~ peaks ~~were~~ detected from the silicon oxide substrate using XPS. Figure 3(f) Iron ~~shows iron~~ peaks detected from the same sample (inset: oxygen peaks and the deconvolution result).